

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

802 SYSTEMS INC., §
§
Plaintiff, §
§
v. § Case No. 2:20-cv-00315-JRG-RSP
§
CISCO SYSTEMS, INC., §
§
Defendant. §

CLAIM CONSTRUCTION MEMORANDUM AND ORDER

On July 27, 2021, the Court held a hearing to determine the proper construction of disputed terms in United States Patents No. 7,013,482 (“482 Patent”), 7,031,267 (“267 Patent”), and 8,458,784 (“784 Patent”). Before the Court is the Opening Claim Construction Brief (Dkt. No. 49) filed by Plaintiff 802 Systems Inc. (“Plaintiff” or “802 Systems”), the Responsive Claim Construction Brief (Dkt. No. 53) filed by Defendant Cisco Systems, Inc. (“Defendant” or “Cisco”), and Plaintiff’s reply (Dkt. No. 54). Further before the Court are the parties’ joint claim construction charts filed pursuant to Local Patent Rule (“P.R.”) 4-3 (Dkt. No. 45-1) and P.R. 4-5(d) (Dkt. No. 55-1). Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing, having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

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I. BACKGROUND

Plaintiff alleges infringement of the '482 Patent, '267 Patent, and '784 Patent. Dkt. No. 49-2, 49-3, 49-4. The patents-in-suit relate to data communications, and Plaintiff submits that “[t]he Patents generally relate to filtering packets, whereby filtering is performed while the packet is being transmitted.” Dkt. No. 49 at 1. Defendant likewise submits that the patents-in-suit are intended to filter packets without buffering the packets, and “[t]he Asserted Patents

proposed a hardware-based solution that aimed to reduce the cost and complexity of conventional data protection systems.” Dkt. No. 53 at 1.

The ’482 Patent, titled “Methods for Packet Filtering Including Packet Invalidations if Packet Validity Determination Not Timely Made,” issued on March 14, 2006, and bears an earliest priority date of July 7, 2000. The Abstract of the ’482 Patent states:

Methods and systems for firewall/data protection that filters data packets in real time and without packet buffering are disclosed. A data packet filtering hub, which may be implemented as part of a switch or router, receives a packet on one link, reshapes the electrical signal, and transmits it to one or more other links. During this process, a number of filters checks are performed in parallel, resulting in a decision about whether each packet should or should not be invalidated by the time that the last bit is transmitted. To execute this task, the filtering hub performs rules-based filtering on several levels simultaneously, preferably with a programmable logic or other hardware device. Various methods for packet filtering in real time and without buffering with programmable logic are disclosed. The system may include constituent elements of a stateful packet filtering hub, such as microprocessors, controllers, and integrated circuits. The system may be reset, enabled, disabled, configured, and/or reconfigured with toggles or other physical switches. Audio and visual feedback may be provided regarding the operation and status of the system.

The ’784 Patent resulted from a continuation of a continuation of the ’482 Patent. The ’267 Patent, titled “PLD-Based Packet Filtering Methods with PLD Configuration Data Update of Filtering Rules,” issued on April 18, 2006, and bears a filing date of December 21, 2000. The Abstract of the ’267 Patent states:

Methods and systems for a PLD-based network update transport (PNUT) protocol that utilizes UDP and other protocols for transmitting update or other commands or information over a packet-based or IP network. PNUT is a hardware-based network communication protocol that does not require the full TCP/IP stack and may be utilized for exchanging commands and information with such PLD-based and other devices. Protocols may include a set of core commands and a set of custom commands. Logic components within the PLD-based devices may consist of a command dispatcher, a transmitter/controller, a MAC receiver, a MAC transmitter, a packet parser, a packet generator, and core receiving and transmitting commands. The present invention may be implemented without requiring CPU cores, special controllers, stringent timings, or operating systems as compared with conventional network protocols. Various methods for

exchanging and updating PNUT commands are disclosed. The methods and systems of the present invention may be utilized to provide other functions, such as filtering, logging, polling, testing, debugging, and monitoring, and may be implemented between a server and a PLD-based device or solely between PLD-based devices.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating discussion. Those preliminary constructions are noted below within the discussion for each term.

II. LEGAL PRINCIPLES

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). “In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841 (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the ‘evidentiary underpinnings’ of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.” *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*,

262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack

sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”). “[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.” *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are entirely unhelpful to a court. *Id.* Generally, extrinsic

evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

The Supreme Court of the United States has “read [35 U.S.C.] § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus*, 134 S. Ct. 2120.

III. AGREED TERMS

The parties reached agreement on constructions as stated in their May 4, 2021 Joint Claim Construction and Prehearing Statement (Dkt. No. 44 at 1). Those agreements are set forth in Appendix A to the present Claim Construction Memorandum and Order.

IV. DISPUTED TERMS

1. “programmable logic device”

“programmable logic device”	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“a logic device that allows updating of filtering configuration, filtering programming, and/or filtering rules / criteria”	“device that can have its logic reprogrammed with code”

Dkt. No. 45-1 at 1; Dkt. No. 49 at 5; Dkt. No. 53 at 7; Dkt. No. 55-1 at 1.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “device that can have its logic reprogrammed with code.”

(a) The Parties’ Positions

Plaintiff argues that its proposed construction is consistent with surrounding claim language, and Plaintiff also argues that “[o]ne of the main focuses of the Patents is the ability to *update* a device’s filtering configuration” Dkt. No. 49 at 6. Further, Plaintiff argues that during prosecution the patentee presented arguments consistent with Plaintiff’s proposed construction. *Id.* at 8.

Defendant responds that “[a] ‘programmable logic device’ (‘PLD’) is a well understood term that refers to a device in which the logic is programmable, which is reflected in the term itself, the intrinsic record, and the extrinsic evidence.” Dkt. No. 53 at 7. Defendant argues that “[i]nstead of defining what a ‘programmable logic device’ is, 802 Systems’ construction reads into the term a number of concepts related to updating packet filtering rules, which is improper.” *Id.* (citations omitted). Defendant concludes that “[b]y advancing a construction that does not define what a ‘programmable logic device’ actually is, Plaintiff is suggesting that any device ‘that allows updating of filtering configurations . . . ’ would meet the limitation, which would improperly read out the term ‘programmable logic’ from the term ‘programmable logic device.’” *Id.* at 7–8 (citation omitted). Further, Defendant argues:

Namely, all of the evidence (as discussed below) shows that the “programmable logic” of the “programmable logic device” relates to the logic of electronic components (i.e., hardware) used to build reconfigurable integrated circuits. It is not the same as a device that merely allows for the updating of software (or filtering criteria) if the logic of the electronic components are not themselves reconfigured.

Id. at 8. That is, Defendant proposes that what must be programmable is *hardware*. *Id.* Defendant opposes Plaintiff’s “attempt to capture ASIC systems by alleging that the logic to implement a first set of rules is initially programmed into the ‘design’ of the circuit then subsequently the device ‘allows updating’ by way of software to implement a second set of rules.” *Id.* at 12 (citation omitted). Defendant urges that “[i]f the claims were given the broad interpretations 802 Systems urge, the inventions would be ‘unable to achieve [their] stated objective,’ and thus 802 Systems’ construction cannot be adopted.” *Id.* (quoting *Carroll Touch, Inc. v. Electro Mech. Sys.*, 15 F.3d 1573, 1578 (Fed. Cir. 1993).)

Plaintiff replies that “[d]istilled to its essence, Defendant’s Response argues that the Court should construe ‘programmable logic device’ to exclude ASICs (application specific integrated circuits),” but “Defendant[] expressly represented to the PTAB that the Patents’ ‘programmable logic device’ includes ASICs” Dkt. No. 54 at 1 (citations omitted).

At the July 27, 2021 hearing, Plaintiff argued that Defendant is attempting to exclude ASICs despite acknowledging in *inter partes* review (“IPR”) petitions that the specification refers to “ASIC” as an example of a PLD. *See* ’267 Patent at 25:24–27, 25:40–42. Defendant responded that Plaintiff mischaracterizes the IPR petitions, and Defendant submitted that the opinions of its expert, regarding what a PLD *is*, are unrebutted.

(b) Analysis

The term “programmable logic device” is abbreviated as “PLD” in the specification and in the claims.

Claim 1 of the ’267 Patent, for example, recites (emphasis added):

1. A method for updating the configuration of a *programmable logic device*-based packet filtering system (“PLD system”) operating to filter packets received from a packet-based network, wherein filtering rules are used to determine whether a packet is to be junked, comprising the steps of:

operating the *PLD* system in accordance with first configuration data, wherein, in accordance with the first configuration data, the *PLD* system receives packets including at least first packets from the network, filters the first packets based on the filtering rules, and transmits the filtered first packets to an electronic connection coupled to the *PLD* system, wherein the *PLD* system filters the first packets at least in part based on source or destination address information and based on the first configuration data;

receiving second configuration data for the *PLD* system sent from a computing system, wherein the second configuration data is selectively received by the *PLD* system based on version identification information for the *PLD* system, wherein the second configuration data are different from the first configuration data;

loading the second configuration data into the *PLD* system; and

operating the *PLD* system in accordance with the second configuration data, wherein, in accordance with the second configuration data, the *PLD* system receives packets including at least second packets from the network, filters the second packets based on the filtering rules, and transmits the filtered second packets to the electronic connection coupled to the *PLD* system, wherein *PLD* system filters the second packets at least in part based on source or destination address information and based on the second configuration data.

The Field of the Invention states that “[t]he present invention relates to systems and methods for hardware-based network communication protocols” ('267 Patent at 1:7–12), and the Background of the Invention of the '267 Patent states:

The present invention provides an alternative to these models and is a logic-based communication protocol, which can enable a wide variety of devices, including FPGA-based security devices, that are connected to packet networks to be updated or to otherwise send or receive commands or information over the packet network. The present invention includes such a PLD-based network update transport protocol, which is often referred to herein as “PNUT”. In accordance with preferred embodiments of the present invention, PNUT preferably is a UDP-based protocol designed to allow IP network-based systems to communicate with a variety of networked devices that typically would be unsuited for such communications because they do not include the necessary resources to implement the traditional TCP/IP “stack.” Utilizing the PNUT protocol, however, such devices may send and/or receive update or other packets.

The PNUT protocol in accordance with preferred embodiments offers numerous advantages over the traditional OSI- and TCP/IP models, which typically are considered to require a full network protocol stack.

'267 Patent at 1:32–51.

The Summary of Invention of the '482 Patent states:

The present invention makes a filtering decision by performing the rules evaluations simultaneously at the hardware level, preferably with a programmable logic device.

'482 Patent at 2:56–59. Although this disclosure refers to a programmable logic device as being “preferabl[e]” rather than necessarily being the only possible implementation, the claim term here at issue is “programmable logic device.”

This disclosure of a programmable logic device being a hardware device that performs rules evaluations “at a hardware level” thus informs the proper construction of the term “programmable logic device.” *Id.* This understanding is consistent with additional disclosures in the specification, such as that “PLD 162 provides logic/hardware based, parallel filtering rules logic/engines,” “[t]he logic of PLD 162 to implement the filtering rules is programmed/loaded by controller 164,” and “the PLD code may be updated by reprogramming memory 166, and the updated PLD code may then be programmed/loaded in to PLD 162 under control of processor 164.” '482 Patent at 17:44–59; *see* '267 Patent at 19:42–58 (same). This is also consistent with disclosure that “[a] further object of the present invention is to perform the filtering tasks of Internet firewall protection through the use of *hardware* components.” '267 Patent at 4:52–54 (emphasis added); *see id.* at 1:60–62 (“free up critical system resources, which may normally be occupied by software applications”).

Figure 9 is likewise consistent with interpreting programmable logic device as a particular type of hardware because, for example, this figure illustrates a PLD accompanied by LEDs as well as PHY and RJ-45 connections, all of which connote physical structure rather than, for example, merely software. *See id.* at Fig. 9 (illustrating controller and PLD); *see also* '784 Patent at Fig. 9 (same).

The various claim limitations regarding updating the filtering configuration, cited by Plaintiff, do not compel otherwise. *See* Dkt. No. 49 at 6; *see also* Dkt. No. 54 at 2.

Disclosures in the specification cited by Plaintiff, such as those cited above as well as others, are not inconsistent with Defendant's proposed construction and do not adequately support Plaintiff's proposed construction. *See* '267 Patent at 20:36–39, 21:18–20 (“the updated PLD code may be loaded into the PLD, with the filtering operations being based on this updated code”), 22:63–67 (“is utilized to update the logic programming and rules tables”), 25:31–33 & 29:7–12.

Prosecution history cited by Plaintiff is likewise unpersuasive. *See* Dkt. No. 49-5 at 119, Feb. 6, 2005 Amendment, (“configuration data for the PLD may be updated with packet filtering thereafter being performed based on the updated configuration data”); *see also id.* at 85, July 18, 2005 Amendment, (“configuration update of a programmable logic device-based packet filtering system (‘PLD system’)’); *id.* at 26, Dec. 2, 2005 Amendment Pursuant to Rule 312, (“Among other distinctions, the cited reference does not disclose or suggest updating filtering rules via PLD configuration data, etc.”). These statements are not inconsistent with Defendant's proposal that the relevant programmable logic must be implemented in hardware.

Further, not controlling but nonetheless noteworthy, the disclosed example of a PLD (“Xilinx Spartan II XC2S100”) is consistent with Defendant's proposed interpretation. *See* '267 Patent at 10:20–22 (“A programmable logic device, such as Xilinx Spartan II XC2S100”); *see also* Dkt. No. 53-11, (Xilinx WP110, *Reed-Solomon Solutions with Spartan-II FPGAs* 8 (Feb. 10, 2000) (“Spartan-II FPGAs are based on SRAM technology and are customized by loading configuration data into internal memory cells and therefore are very easy to re-program in an unlimited number of times.”)); *id.* (“Spartan-II is inherently reprogrammable”). This

evidence shows that the example disclosed in the specification is an FPGA (field-programmable gate array), which is a type of hardware device, and this evidence can be considered. *See Arthur A. Collins, Inc. v. N. Telecom Ltd.*, 216 F.3d 1042, 1044–45 (Fed. Cir. 2000) (“When prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.”).

Finally, Defendant submits that one of the references cited by the ’267 Patent refers to PLDs as user-configurable hardware. Dkt. No. 53-12, U.S. Patent No. 6,020,758 at 1:17–28. This, too, can be considered. *Cf. Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996). (“Even when prior art is not cited in the written description or the prosecution history, it may assist in ascertaining the meaning of a term to a person skilled in the art.”)

Based on all of the foregoing, and because Plaintiff’s proposal would depart from the evidence of the known meaning of “programmable logic device” in the art and would instead potentially encompass any device that allows updating filtering configurations, the Court rejects Plaintiff’s proposed construction. The opinions of Defendant’s expert are further persuasive in this regard. *See* Dkt. No. 53-8 at 15–20.

Any remaining dispute, such as whether a particular application-specific integrated circuit (“ASIC”) meets the claim limitations (*see* Dkt. No. 53 at 12), is a question of fact for the finder of fact rather than a question of law for claim construction. *See PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) (“after the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact”); *see also Acumed LLC v. Stryker Corp.*, 483 F.3d

800, 806 (Fed. Cir. 2007) (“[A] sound claim construction need not always purge every shred of ambiguity. The resolution of some line-drawing problems . . . is properly left to the trier of fact.”) (citing *PPG*, 156 F.3d at 1355); *see also Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1318–19 (Fed. Cir. 2016) (citing *Acumed*, 483 F.3d at 803 and *PPG*, 156 F.3d at 1355).¹

The Court therefore hereby construes “**programmable logic device**” to mean “**device that can have its logic reprogrammed with code**.”

2. “**programmable logic circuit**”

“programmable logic circuit”	
'482 Patent, Claim 33	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“A logic device that allows updating of filtering configuration, filtering programming, and/or filtering rules / criteria.”	“device that can have its logic reprogrammed with code”

Dkt. No. 45-1 at 4; Dkt. No. 49 at 8; *see* Dkt. No. 55-1 at 7.

¹ Plaintiff submits that Defendant stated, in an *inter partes* review petition, that “[t]he ’267 patent further explains that the PLD may be a ‘FPGA, CPLD, [or] ASIC’ device,” but Plaintiff has not made this *inter partes* review petition part of the record in the present case. Plaintiff’s reply brief cites “’267 Petition at 10 (citing ’267 Patent, 25:42, 25:42–27 [*sic!*])” but does not cite any exhibit (Dkt. No. 54 at 1), and Plaintiff’s reply brief includes no exhibits. In any event, any potential estoppel stemming from the submitted statement would not appear to warrant a different outcome on the present issue. The *Rambus* case cited in Plaintiff’s reply brief does not compel otherwise because Plaintiff has not shown that an ASIC is “the preferred embodiment.” *Rambus Inc. v. Rea*, 731 F.3d 1248, 1253 (Fed. Cir. 2013) (“A claim construction that excludes the preferred embodiment is rarely, if ever, correct and would require highly persuasive evidentiary support.”) (citation and internal quotation marks omitted). Plaintiff’s reliance on disclosures regarding updating “configuration data” is also unavailing. *See* Dkt. No. 54 at 2 n.1 (citing ’267 Patent at 4:12–14, 26:9–23, 26:32–27:6, 27:7–11, 27:25–63, 28:16–23, 28:32–51, 29:1–27, 34:11–40, 35:24–34, 35:35–36:14, 38:14–19, 39:61–40:4, 40:38–57, 41:4–16).

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “device that can have its logic reprogrammed with code.”

Plaintiff argues that “the term ‘programmable logic circuit’ derives antecedent basis from ‘programmable logic device’ and should be construed in the same manner.” Dkt. No. 49 at 8. Defendant responds that “[t]he parties have agreed that this term ‘should be construed in the same manner’ as ‘programmable logic device.’” Dkt. No. 53 at 12–13 (citing Dkt. No. 49 at 8); *see* Dkt. No. 55-1 at 7. Plaintiff’s reply brief does not address this term. *See* Dkt. No. 54. The parties likewise presented no separate oral argument as to this term at the July 27, 2021 hearing.

The Court therefore hereby construes **“programmable logic circuit”** to mean **“device that can have its logic reprogrammed with code.”**

3. “the packet is selectively altered to be invalid,” “the packet is selectively altered . . . to be invalid,” and “selectively alter the packet to be invalid”

<p>“the packet is selectively altered to be invalid” “the packet is selectively altered . . . to be invalid” “selectively alter the packet to be invalid”</p>

‘482 Patent, Claims 1, 31, 32, 37, 39, 40
 ’784 Patent, Claims 1, 2, 13, 15

Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
Plain and ordinary meaning	“changing bits or truncating data, depending on the type of link, in a manner such that the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc.” In the alternative, indefinite.

Dkt. No. 45-1 at 7; Dkt. No. 49 at 9; Dkt. No. 53 at 13; Dkt. No. 55-1 at 8.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “selectively changing bits or truncating data in a manner such that the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he claims themselves provide definitive context as to the phrases’ meaning,” and “[t]his plain and ordinary meaning is in accord with the Patents’ specification.” Dkt. No. 49 at 9. Plaintiff argues that Defendant’s proposal should be rejected because “Defendant[’s] construction completely removes the concept of ‘selectively altering’ the packet, which relates to the concept of passing packets that pass the filtering checks without alteration and altering packets that do not pass the filtering checks.” *Id.* at 10. Further, Plaintiff argues:

Additionally, Defendant[’s] construction replaces the concept of “altering a packet to be invalid” with the parties’ agreed construction of “junking.” While the patents’ disclosure concerning “selectively altering” encompasses the patents’ disclosure of “junking,” it would be improper to limit the construction of “selectively altering” to the parties’ agreed construction of “junking.”

Id. at 11.

Defendant responds that its proposal “reflects the plain language of the claims when read in view of the specification,” and Defendant submits that “802 Systems agrees that ‘junk[ing]’ is a type of selective alteration covered by the claims, yet alleges that these terms encompass other types of selective alteration of packets without any support regarding what this alteration might be.” Dkt. No. 53 at 13 (citing Dkt. No. 49 at 11). Defendant also argues that “[t]he Asserted Patents are clear that ‘the packet is selectively altered to be invalid’ terms mean the same thing as ‘junk[ing]’ and are used interchangeably as they are described to have an identical process, end result, and purpose within the system.” Dkt. No. 53 at 13 (citation omitted). For example,

Defendant submits that the technique of corrupting a packet’s checksum “is a particular type of ‘junking’ that clearly falls within Cisco’s construction.” *Id.* at 15. Further, Defendant argues that “802 Systems cannot reasonably contend that Cisco’s construction reads out ‘selective,’ since the remainder of each of the relevant claim phrases contain an ‘if’ clause stating when that selection is made.” *Id.* at 15 (citation omitted).

Plaintiff replies that “[n]othing in the disclosure of altering the checksum makes any reference to conditioning the alteration on the ‘type of link,’” and “[t]here is simply no good reason to jettison the claim language ‘selectively.’” Dkt. No. 54 at 3.

At the July 27, 2021 hearing, Plaintiff argued that the construction should state “can be” instead of “will be” because the claims do not recite the packet leaving the device and being received. That is, Plaintiff argued that the claims do not require interaction with downstream devices. Plaintiff also argued that if “by the receiving computers” is considered, the construction should instead refer to “receiving devices” because many network elements are not “computers.” Defendant responded that referring to a receiving “computer” is appropriate because, Defendant argued, what receives the packets cannot simply be within the data protection system itself.

(b) Analysis

Plaintiff cites disclosures in the specification such as the following, which provide context and which include the parties’ agreed-upon definition of “junking”:

With reference to FIG. 1A, in the illustrated embodiment data protection system 1 is coupled through a port to router 2 (or cable modem or other preferably broadband, persistent network connection access device), which is linked through a broadband connection to other computer systems and networks, exemplified by Internet 8 and Internet Service Provider (ISP) 10. Packets of data are transmitted from an ISP, such as ISP 10, via Internet 8 to router 2. The packets are transmitted to data protection system 1, which analyzes the packets in “real time” and without buffering of the packets, while at the same time beginning the process of transmitting the packet to the internal network(s) in compliance with the timing requirements imposed by the Ethernet or other network standards/protocols. If a

packet of data satisfies the criteria of the rules-based filtering performed within data protection system 1, which is executed in a manner to be completed by the time the entire packet has been received by data protection system 1, then it is allowed to pass to hub 6 as a valid packet, which may then relay the cleared packet to computers 4a, 4b, 4c, etc. on the internal network. *If a packet of data fails to meet the filtering criteria, then it is not allowed to pass as a valid packet and is “junked.” Junking is defined as changing bits or truncating data, depending on the type of link, in a manner such that the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc.* Without the intermediate positioning of data protection system 1, the packets would be transmitted directly to unprotected hub 6, thereby exposing computers 4a, 4b and 4c to security risks. It should also be noted that hub 6 is optional in accordance with the present invention; in other embodiments, data protection system 1 may be directly connected to a single computer or may have multiple ports that connect to multiple computers. Similar filtering is performed on packets that are to be transmitted from computers 4a, 4b, and 4c to Internet 8.

* * *

[R]eferring to FIG. 2, rules controller 28 preferably uses rules map table 32 to dispatch the rules to rules engines 36-1 and 36-N, so that a filtering decision may be reached in the optimal amount of time. In a preferred operation, each rules engine extracts a rule ID from its queue, looks up the rules definition in its own rules table 40-1 to 40-N, evaluates the rule, returns the result to rules controller 28, and looks for another rule ID in its queue 34-1 to 34-N. The results from packet type filter 26 and rules controller 28 are combined into one result via aggregator 24: pass or fail. *If a decision is not reached before the end of the packet is transmitted, then in preferred embodiments the packet will be processed as an invalid packet and junked.*

'482 Patent at 4:46–5:14, 7:53–65 (emphasis added). Additional disclosures provide further context for “corrupt[ing] the packet”:

As illustrated in FIG. 4, any signals indicating that the packet should be junked are provided to result aggregator 24, as indicated by line 73. The filtering results are thus routed to result aggregator 24, which records whether any of the packets were junked and thus invalidated. Result aggregator 24 provides one or more signals to the logic of block 60 at a time early enough so that a Frame Check Sequence (FCS) character may be altered to effectively invalidate the packet. Therefore, prior to complete forwarding of the packet, the filtering decision is made and the FCS character is either altered in order to ensure that it is corrupted, if the packet is to be junked, or forwarded unchanged, if the packet is to be passed. * * * It should be noted that, in alternative embodiments, in lieu of or in addition to the selective alteration of a FCS or checksum-type value, the data contents of the packet also may be selectively corrupted in order to invalidate

packets. In such embodiments, the packet contents are selectively altered to corrupt the packet (e.g., ensure that the checksum is not correct for the forwarded packet data or that the data is otherwise corrupted) if the packet did not pass the filtering rules.

'482 Patent at 11:38–12:7; *see id.* at 10:49–50 (“[a] packet is invalidated for all PHYs that belong to a network category that receives a ‘junk’ signal”).

The parties agree that “to be junked” means “to have bits changed or data truncated, depending on the type of link, in a manner such that the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc.” Dkt. No. 45 at 1. The parties submit that the term “junked” appears in Claim 1 of the '267 Patent.

Claim 1 of the '482 Patent, for example, recites (emphasis added):

1. A method for communicating data between an external computing system and an internal computing system over a packet-based network, wherein data is transmitted and received in the form of a plurality of packets, the method comprising the steps of:

receiving a packet from the external computing system over the network, the packet having at least a first portion and an end portion, and transmitting the packet to the internal computing system;

in parallel with the step of receiving and transmitting the packet, determining characteristics of the packet from the first portion;

in parallel with the step of receiving and transmitting the packet, performing a plurality of checks on the packet, wherein at least certain of the plurality of checks are performing in parallel with other of the plurality of checks;

in parallel with the step of receiving and transmitting the packet, determining if the packet should be a valid packet or an invalid packet based on the plurality of checks; and

after receiving the end portion of the packet, selectively altering the end portion of the packet based on whether the packet has been determined to be a valid packet or an invalid packet, wherein *the packet is selectively altered to be invalid* if it was determined that the packet should be an invalid packet, wherein *the packet is selectively altered to be invalid* if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.

Although Plaintiff argues that Defendant's proposed construction “completely removes the concept of ‘selectively altering’ the packet” (Dkt. No. 49 at 10), surrounding claim language

provides context for *whether* a packet will be “selectively” altered. The disputed term itself is directed to what happens to a packet when “it was determined that the packet should be an invalid packet” or “if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.” The other claims at issue are similar in this regard. *See* ’482 Patent, Cls. 31, 32, 37, 39, 40; *see also* ’784 Patent, Cls. 1, 2, 13, 15; Dkt. No. 49 at 10 (“The other claims in which the disputed phrases appear provide similar context.”). Nonetheless, the parties do not appear to dispute the meaning of “selectively,” and retaining the word “selectively” in the construction will minimize any risk of the potential confusion referred to by Plaintiff.

As to the propriety of Defendant’s proposed construction using the parties’ agreed-upon construction for “junked,” Plaintiff does not demonstrate (through the specification or otherwise) that a person of ordinary skill in the art would understand the disputed term to have any other meaning or any broader meaning. The disclosure of “(e.g., ensure that the checksum is not correct for the forwarded packet data or that the data is otherwise corrupted)” (’482 Patent at 12:3–7), cited by Plaintiff (Dkt. No. 49 at 11), is consistent with the agreed-upon definition of “junked.” The explicit usage of the term “junked,” such as in Claims 1 and 20 of the ’267 Patent, does not compel any broader meaning of the present disputed terms in the ’482 Patent and the ’784 Patent. *See, e.g., Nystrom v. Trex Co.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005) (“Different terms or phrases in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading of the terms or phrases is proper.”).

The proposed phrase “depending on the type of link,” however, would tend to confuse rather than clarify the meaning of the disputed term and does not appear necessary in the context

of these claims. Defendant's proposal of "etc." is likewise rejected. Also, Defendant's proposal of "will be detected by the receiving computers" is potentially confusing as to the meaning of "computer" and as to whether the claims include the detection by receiving computers as an affirmative limitation. Referring instead to "any receiving device" will avoid this potential confusion. Finally, to whatever extent Defendant maintains its assertion of indefiniteness (*see* Dkt. No. 55-1 at 8), Defendant does not meet its burden to prove indefiniteness.

The Court therefore hereby construes "**the packet is selectively altered to be invalid,**" "**the packet is selectively altered . . . to be invalid,**" and "**selectively alter the packet to be invalid**" to mean "**selectively changing bits or truncating data in a manner such that the packet is corrupted, or otherwise that any receiving device will detect that the packet is invalid or unacceptable.**"

4. "selectively altering the end portion of the packet" and "an end portion of the packet is selectively altered"

<p>"selectively altering the end portion of the packet" "an end portion of the packet is selectively altered"</p> <p style="margin-top: 10px;">'482 Patent, Claims 1, 31 '784 Patent, Claim 1</p>	
Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning.	"changing bits or truncating data, depending on the type of link, in a manner such that the end portion of the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc." In the alternative, indefinite.

"selectively altering the end portion of the packet"
"an end portion of the packet is selectively altered"

'482 Patent, Claims 1, 31
 '784 Patent, Claim 1

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Plain and ordinary meaning.	"changing bits or truncating data, depending on the type of link, in a manner such that the end portion of the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc." In the alternative, indefinite.

Dkt. No. 45-1 at 9; Dkt. No. 49 at 12; Dkt. No. 55-1 at 15; *see id.* at 15 n.1.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “selectively changing bits or truncating data in a manner such that the end portion of the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable.”

(a) The Parties’ Positions

Plaintiff argues: “For the reasons set forth above, it would be improper to depart from the claim language concerning ‘selectively altering’ (or ‘selectively altered’) in favor of Defendant’s construction that is limited to the Patents’ preferred embodiment of ‘junking.’” Dkt. No. 49 at 12. Plaintiff also argues that “[t]he claim language at issue is clear from the context of the claims and should be given its plain and ordinary meaning,” and “adopting Defendant[’s] construction would be improper because it improperly omits the concept of ‘*selectively* altering’ from the construction and improperly limits the disputed phrases to the patents’ disclosure of ‘junking.’” *Id.*

Defendant responds that the phrase “end portion of the packet” is addressed as to the “if a determination has been made . . .” term addressed below. Dkt. No. 53 at 16.

Plaintiff’s reply brief does not address these terms. *See* Dkt. No. 54.

(b) Analysis

These terms present substantially the same dispute as addressed above, and as to the present terms the parties do not present any dispute regarding “end portion.” The dispute as the phrase “by the time the end portion of the packet is received,” which appears in the term “if a determination has not been made . . . by the time the end portion of the packet is received,” is addressed separately herein. As to the present disputed terms, “selectively altering the end portion of the packet” and “an end portion of the packet is selectively altered,” the same analysis

applies as is set forth above regarding the other above-addressed “. . . selectively altered . . .” and “selectively alter” terms. Finally, to whatever extent Defendant maintains its assertion of indefiniteness (*see* Dkt. No. 55-1 at 15), Defendant does not meet its burden to prove indefiniteness.

The Court therefore hereby construes **“selectively altering the end portion of the packet”** and **“an end portion of the packet is selectively altered”** to mean **“selectively changing bits or truncating data in a manner such that the end portion of the packet is corrupted, or otherwise that any receiving device will detect that the packet is invalid or unacceptable.”**

5. “if a determination has not been made . . . by the time the end portion of the packet is received”

**“if a determination has not been made . . .
by the time the end portion of the packet is received”**

’482 Patent, Claims 1, 31
’784 Patent, Claim 1

Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
<p>’482 Patent, Claim 1: “if a determination has not been made as to whether the packet is valid or invalid based on the plurality of checks by the time the end portion of the packet is received by the component that performs the step of ‘selectively altering’”²</p>	<p>“if a determination has not been made by the time the last bit of the packet has been received at the external/first interface circuit/internet PHY”</p> <p>In the alternative, indefinite.</p>
<p>’482 Patent, Claim 31: “if a determination has not been made by the programmable logic device as to whether the packet is valid or invalid based on the filtering criteria by the time the end portion of the packet is received by the programmable logic device”</p>	
<p>’784 Patent, Claim 1: “if a determination has not been made by the filtering circuit as to whether the packet is valid or invalid based on the filtering criteria by the time the end portion of the packet is received by the filtering circuit”</p>	

Dkt. No. 45-1 at 12; Dkt. No. 49 at 12–13; Dkt. No. 53 at 16; Dkt. No. 55-1 at 20.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary constructions:

² Plaintiff originally proposed: ‘if a determination has not been made as to whether the packet is valid or invalid based on the plurality of checks by the time the end portion of the packet is received.’ However, Plaintiff has proposed this alternative construction herein in order to help to clarify the disputed issues.” Dkt. No. 49 at 13 n.2.

<u>Term</u>	<u>Preliminary Construction</u>
“if a determination has not been made . . . by the time the end portion of the packet is received” (’482 Patent, Claim 1)	“if a determination has not been made . . . by the time the last bit of the packet has been received by the component that can selectively alter the packet”
“if a determination has not been made . . . by the time the end portion of the packet is received” (’482 Patent, Claim 31)	“if a determination has not been made . . . by the time the last bit of the packet has been received by the programmable logic device”
“if a determination has not been made . . . by the time the end portion of the packet is received” (’784 Patent, Claim 1)	“if a determination has not been made . . . by the time the last bit of the packet has been received by the filtering circuit”

(a) The Parties’ Positions

Plaintiff argues:

The parties’ dispute concerns identification of the component that “receives” the end portion of the packet for purposes of determining “by the time the end portion of the packet is received.” Plaintiff’s construction correctly recognizes that this component is the same component that “selectively [alters the packet] to be invalid.” Defendant’s construction improperly identifies this component as the external interface (i.e., the front-end component of the data protection system that receives the packet from the external network). This construction is contrary to the specification’s disclosed embodiments and likely renders the claims inoperable.

Dkt. No. 49 at 13 (citation omitted). As to Defendant’s proposed construction, Plaintiff also argues:

It is likely that Defendant’s construction is based on the patent’s use of “completely received” in the . . . disclosure associated with Figure 6. However, it would be incorrect to assume that the use of “completely received” relates to receipt by the external interface that receives packets from the external network (e.g., the front-end component of the system that receives data to be filtered from the Internet). Indeed, the Patents repeatedly refer to “receipt” by the component performing the selective alteration * * *

Id. at 18 (citations omitted).

Defendant responds:

[T]he limitation requires a determination to be made by the time[fn] the data protection system receives the entire packet, i.e., upon receiving the end of the packet (the last bit) at the “first interface circuit” ('784, cl. 1), which is also referred to in the specification as the “external PHY” ('482, cl. 1).

[fn: The definition of “by the time” is “at the time: when.” *See Ex. 8, Merriam Webster Definition.]*”

Dkt. No. 53 at 17. Defendant argues that “the ‘receiving’ is the receipt from the external network,” and “802 Systems’ construction changes that reference of ‘receiving’ from the ‘external network’/‘internet’ to receiving at a component that it is nowhere recited in the claim, thus rendering once clear claim language into something ambiguous.” *Id.* (citations omitted). Defendant urges that “[t]he claims are clear that the determination must be made by the time the ‘data protection system’ receives the end portion of the packet, which would be at the ‘first interface circuit,’ and not, as 802 proposes, when the ‘filtering circuit’ receives the end portion of the packet.” *Id.* at 18.

Plaintiff replies that “[t]he Patents’ disclosure concerning ‘by the time the end portion of the packet is received’ is clearly linked to the component performing the selective alteration (e.g., the repeater core).” Dkt. No. 54 at 4. Plaintiff argues: “[n]otably missing from Defendant’s Response is any similar disclosure linking the disputed phrase to the components identified in Defendant’s construction (i.e., the ‘external/first interface circuit/internet PHY’). This is because the Patents do not associate the timing issue with this componentry.” *Id.* Plaintiff reiterates that “[f]or purposes of the disputed phrases, the relevant ‘receipt’ is by the componentry performing the selective alteration.” *Id.* at 5 (footnote omitted). Also, as to Claim 1 of the ’784 Patent, “[t]he ‘data protection system’ referred to by Defendant is not an element of

the claim, but rather a part of a preamble which Defendant has never claimed to be limiting.” *Id.* Finally, Plaintiff argues that “Defendant has not explained why this phrase, which references a packet between both interface circuits, and discusses both receipt and transmission, somehow limits the ‘receiving’ of the packet to only the first interface circuit.” *Id.* at 6.

At the July 27, 2021 hearing, Plaintiff argued that “end portion” is a known term and therefore should not be construed. Defendant responded that the specification refers to the “last bit,” and Defendant notes that the claims do not recite the “repeater core” that is disclosed in the specification. Defendant also noted that the physical interfaces are disclosed as being separate from the programmable logic device, such as shown in Figure 9 of the patents-in-suit.

(b) Analysis

As a threshold matter, both sides include the phrase “by the time” in their proposed constructions. Because the parties thus appear to have a mutual understanding of the phrase “by the time,” the Court need not construe that phrase.

The parties disagree as to *where* the “packet is received.” That is, the parties dispute what is “receiving” the packet in the disputed term. Differing interpretations as to where the packet “is received” may have an impact on determining the relevant time for the “by the time” aspect of this claim limitation.

The specification discloses, for example: “If a packet of data satisfies the criteria of the rules-based filtering performed within data protection system 1, which is executed in a manner to be completed by the time the entire packet has been received by data protection system 1, then it is allowed to pass to hub 6 as a valid packet.” ’482 Patent at 4:59–66; *see id.* at 8:6–12 (“Given that a filtering decision must be made in real time (before the last bit is received and forwarded to the applicable interfaces), the filter rules are evaluated in parallel by rules engines that possess

independent, direct access to the rules[.]"); *see also id.* at 7:22-26 ("As will be appreciated, while the packet pass/fail decision is being made in real time, and thus must be concluded by the time that the entire packet has been received, a large of number of filtering rules must be performed quickly and in parallel."), 7:46-52, 8:55-58.

Figure 2 provides context and is reproduced here³:

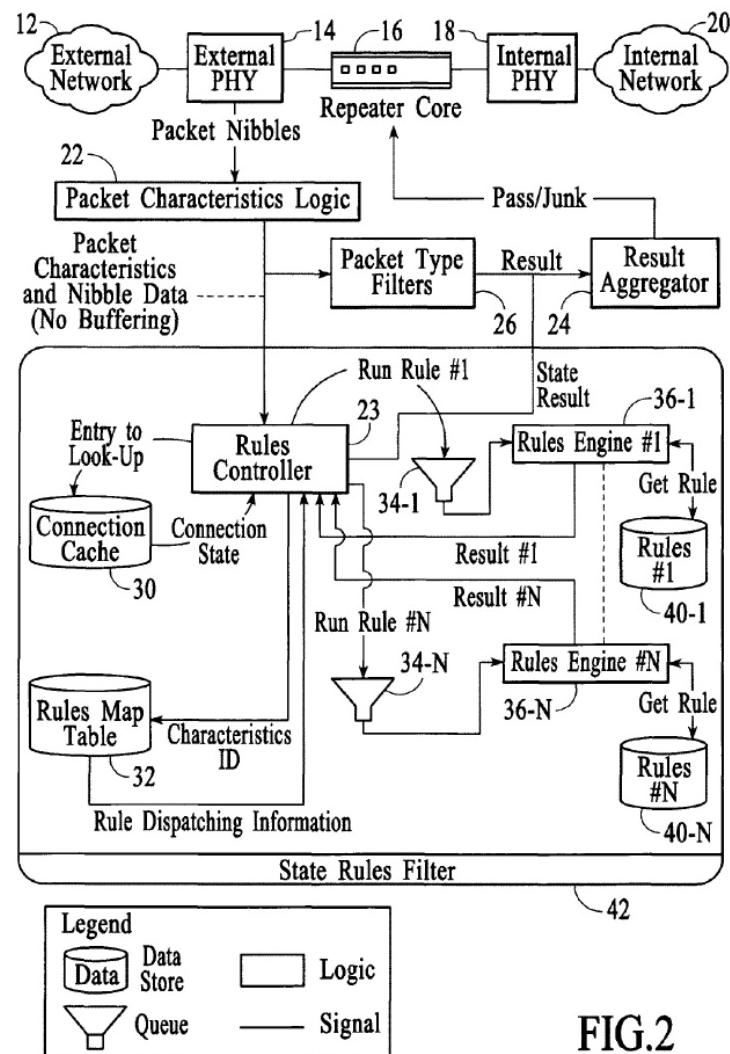


FIG.2

³ Figure 2 of the '784 Patent appears to be a refined but substantively identical version of Figure 2 of the '482 Patent. Figure 2 of the '784 Patent is reproduced here.

Plaintiff submits that the patents disclose waiting as long as possible for the determination. Plaintiff submits that “in the disclosure associated with Figure 2, the Patents indicate that the filtering results are returned to the repeater core such that the repeater core may modify the end portion of a packet in the event a filtering result is indeterminate” (Dkt. No. 49 at 14):

Repeater core 16 functions as an Ethernet repeater (as defined by the network protocols of the IEEE standard 802.3) and serves to receive packets from external PHY 14, reshape the electrical signals thereof, and transmit the packets to internal PHY 18, which is coupled to internal network 20. While the packet is being received, reshaped, and transmitted between PHYs 14 and 18, however, it is simultaneously being evaluated in parallel with filtering rules to determine if it should be allowed to pass as a valid packet

* * *

[T]he results of filtering by packet type filters 26 and state rules filters 42 are provided to [results] aggregator 24 by the time that the entire packet reaches repeater core 16, so that, based on the output of aggregator 24, the packet will either be allowed to pass as a valid packet or will be failed and junked as a suspect (or otherwise invalidated) packet.

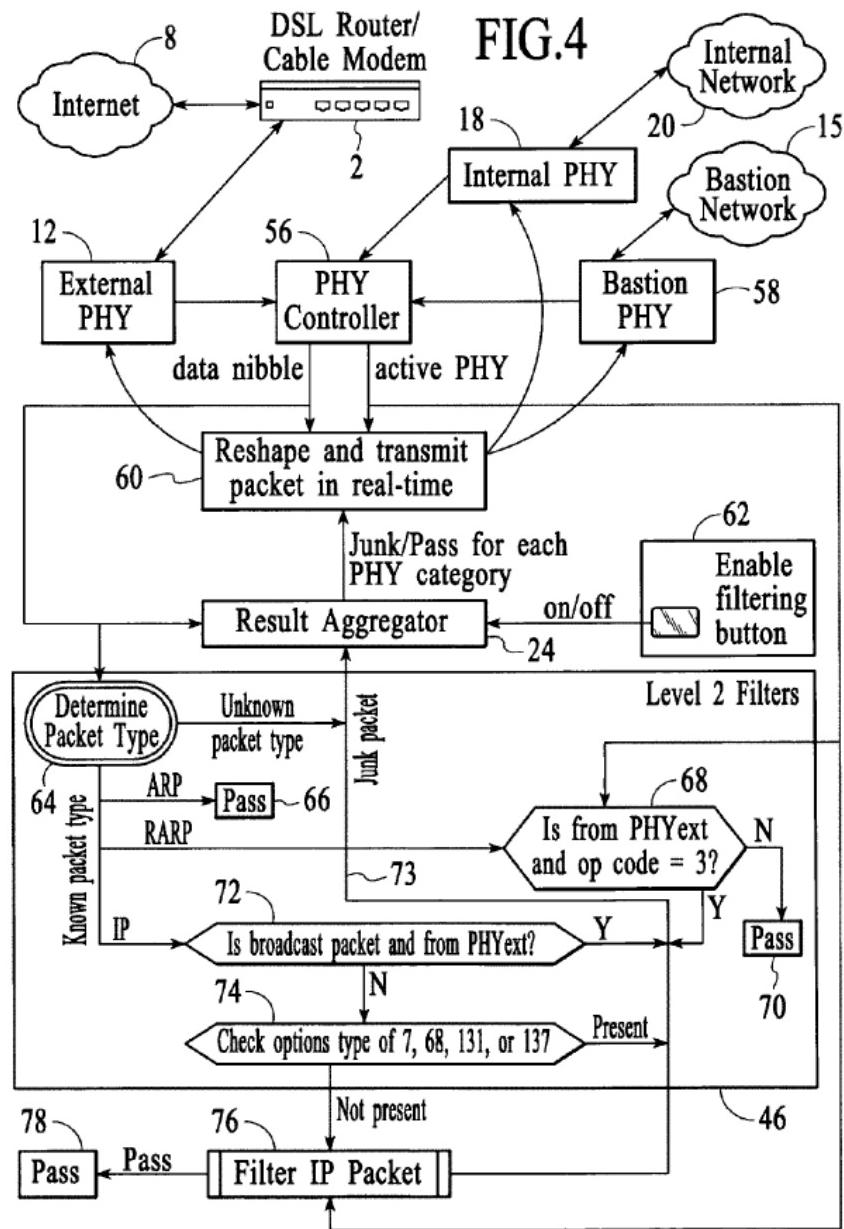
* * * What is important is that packet type filtering is performed by filters 26 in the shortest time interval possible and in parallel with the packet data being received and transmitted to internal PHY 18, so that a pass/fail determination may be made prior to the time when the entire packet has been received by repeater core 16.

State rules filters 42 receive packet characteristics data from logic 22 and . . . executes a plurality of rules under the control of rules controller 28 . . . so that a desired set of filtering decisions are promptly made and a pass/fail determination occurs before the entire packet has been received by repeater core 16. * * *

* * * The results from packet type filter 26 and rules controller 28 are combined into one result via aggregator 24: pass or fail. If a decision is not reached before the end of the packet is transmitted, then in preferred embodiments the packet will be processed as an invalid packet and junked.

'482 Patent at 5:64–6:5, 6:36–7:65.

Plaintiff also refers to Figure 4, which is reproduced here:



Referring to Figure 4, the specification discloses:

Result aggregator 24 provides one or more signals to the logic of block 60 at a time early enough so that a Frame Check Sequence (FCS) character may be altered to effectively invalidate the packet. Therefore, prior to complete forwarding of the packet, the filtering decision is made and the FCS character is either altered in order to ensure that it is corrupted, if the packet is to be junked, or forwarded unchanged, if the packet is to be passed.

Id. at 11:38–50; *see id.* at 11:50–59; *see also id.* at 14:10–24 (“if the completion signal is not generated by the time that the packet has been completely received, then the packet is junked”).

Claim 1 of the ’482 Patent, for example, recites (emphasis added):

1. A method for communicating data between an external computing system and an internal computing system over a packet-based network, wherein data is transmitted and received in the form of a plurality of packets, the method comprising the steps of:

receiving a packet from the external computing system over the network, the packet having at least a first portion and an end portion, and transmitting the packet to the internal computing system;

in parallel with the step of receiving and transmitting the packet, determining characteristics of the packet from the first portion;

in parallel with the step of receiving and transmitting the packet, performing a plurality of checks on the packet, wherein at least certain of the plurality of checks are performing in parallel with other of the plurality of checks;

in parallel with the step of receiving and transmitting the packet, determining if the packet should be a valid packet or an invalid packet based on the plurality of checks; and

after receiving the end portion of the packet, selectively altering the end portion of the packet based on whether the packet has been determined to be a valid packet or an invalid packet, wherein the packet is selectively altered to be invalid if it was determined that the packet should be an invalid packet, wherein the packet is selectively altered to be invalid *if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.*

At first blush, where the disputed term recites “is received,” the disputed term perhaps could be read as referring to the earlier step of “receiving a packet *from the external computing system* over the network.” *Cf. Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781–82 (Fed. Cir. 2010) (as to claim reciting “[a] centrifugal unit comprising a centrifugal component,” noting as to a subsequent limitation that “[t]he claim then further recites, not the centrifugal component and not *a* centrifugal unit, but “*the* centrifugal unit”). Also, as to Figure 1A, the specification refers not to any particular component within the device but rather to “by the time the entire packet has been *received by data protection system 1.*” ’482 Patent at 4:59–66 (emphasis added)

But in light of the other disclosures in the specification, such as cited above, the recital of “is received” refers to what is “selectively altering.” Defendant’s proposal of focusing on the receiving by the front-end external interface is discouraged by disclosures in which a determination completion signal is sent to components that pass along the packet. *See ’482 Patent at 5:64–6:5, 6:36–7:65 (quoted above); see also id. at 8:6–12 (“Given that a filtering decision must be made in real time (*before the last bit is received and forwarded to the applicable interfaces*), the filter rules are evaluated in parallel by rules engines that possess independent, direct access to the rules set”)) (emphasis added); id. at 7:22–26 (“As will be appreciated, while the packet pass/fail decision is being made in real time, and thus must be concluded by the time that the entire packet has been received, a large of number of filtering rules must be performed quickly and in parallel.”), 7:46–52, 8:55–9:31, 15:19–28, 17:44–50 (“PLD 162 provides logic/hardware based, parallel filtering rules logic/engines, which make a decision about whether the packet should be allowed to pass or fail prior to the time that the packet is passed on by the repeater core portion of PLD 162 (as described elsewhere herein).”).*

Claim 31 of the ’482 Patent likewise recites (emphasis added):

31. A system for filtering packets of data between at least an external network and an internal network, wherein data is transmitted and *received* in the form of a plurality of packets, comprising:

a first interface circuit for coupling data packets to and from the external network;

a second interface circuit for coupling data packets to and from the internal network;

a programmable logic device coupled between the first interface circuit and the second interface circuit;

wherein, *as a packet is being received and transmitted between the first and second interface circuits*, the packet is simultaneously subjected to a plurality of filtering criteria by the programmable logic device, wherein an end portion of the packet is selectively altered by the programmable logic device based on the filtering criteria, wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet *is received*.

Here, a natural reading of the claim in light of the above-cited disclosures in the specification is that “is received” refers to the programmable logic device. The same analysis applies to Claim 1 of the ’784 Patent, which recites “a filtering circuit coupled between the first interface circuit and the second interface circuit” and “wherein an end portion of the packet is selectively altered by the filtering circuit based on the filtering criteria, wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.”

As to the constituent phrase “end portion of the packet,” the specification discloses for example that “a filtering decision is made between the time the first bit is received on the incoming port and the time the *last bit* is transmitted on the outgoing links (’482 Patent at 2:41–59 (emphasis added)), and “some construction of the disputed claim language will assist the jury to understand the claims.” *TQP Dev., LLC v. Merrill Lynch & Co.*, No. 2:08-CV-471-WCB, 2012 WL 1940849, at *2 (E.D. Tex. May 29, 2012) (Bryson, J., sitting by designation).

Finally, to whatever extent Defendant maintains its assertion of indefiniteness (*see* Dkt. No. 55-1 at 20), Defendant does not meet its burden to prove indefiniteness.

The Court therefore hereby construes the disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“if a determination has not been made . . . by the time the end portion of the packet is received” (’482 Patent, Claim 1)	“if a determination has not been made . . . by the time the last bit of the packet has been received by the component that can selectively alter the packet”

<p>“if a determination has not been made . . . by the time the end portion of the packet is received”</p> <p>(’482 Patent, Claim 31)</p>	<p>“if a determination has not been made . . . by the time the last bit of the packet has been received by the programmable logic device”</p>
<p>“if a determination has not been made . . . by the time the end portion of the packet is received”</p> <p>(’784 Patent, Claim 1)</p>	<p>“if a determination has not been made . . . by the time the last bit of the packet has been received by the filtering circuit”</p>

6. “wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received”

“wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received”

'482 Patent, Claims 1, 31
'784 Patent, Claim 1

Plaintiff's Proposed Construction	Defendant's Proposed Construction
<p>'482 Patent, Claim 1:</p> <p>“wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid based on the plurality of checks by the time the end portion of the packet is received by the component that performs the step of ‘selectively altering’”⁴</p> <p>'482 Patent, Claim 31:</p> <p>“wherein the packet is selectively altered to be invalid by the programmable logic device if a determination has not been made by the programmable logic device as to whether the packet is valid or invalid based on the filtering criteria by the time the end portion of the packet is received by the programmable logic device”</p> <p>'784 Patent, Claim 1:</p> <p>“wherein the packet is selectively altered to be invalid by the filtering circuit if a determination has not been made by the filtering circuit as to whether the packet is valid or invalid based on the filtering criteria by the time the end portion of the packet is received by the filtering circuit”</p>	<p>See above constructions for “the packet is selectively altered to be invalid” and “if a determination has not been made . . . by the time the end portion of the packet is received”</p>

⁴ Plaintiff originally proposed: ‘wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid based on the plurality of checks by the time the end portion of the packet is received.’ However, Plaintiff has proposed this alternative construction herein in order to help to clarify the disputed issues.” Dkt. No. 49 at 21 n.3.

Dkt. No. 45-1 at 14–15; Dkt. No. 49 at 20–21; Dkt. No. 55-1 at 24–25.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “Plain meaning (apart from the constructions of constituent terms).”

(a) The Parties’ Positions

Plaintiff submits that this term mostly presents the same issues as the “if a determination has not been made” term (addressed above), and Plaintiff argues that “[t]he only remaining issue concerns clarifications with respect to Claim 31 of the ’482 Patent and Claim 1 of the ’784 Patent.” Dkt. No. 49 at 21. Plaintiff argues that in Claim 31 of the ’482 Patent, “the previous ‘wherein’ clause already makes clear that the ‘programmable logic device’ is responsible for performing the ‘selectively altering.’” *Id.* Likewise, as to Claim 1 of the ’784 Patent, Plaintiff argues that “the previous ‘wherein’ clause already makes clear that the ‘filtering circuit’ is responsible for performing the ‘selectively altering.’” *Id.* at 21–22.

Defendant responds that this term presents substantially the same dispute as the “if a determination has not been made . . .” term. Dkt. No. 53 at 20–21.

Plaintiff’s reply brief does not address this term. *See* Dkt. No. 54.

At the July 27, 2021 hearing, the parties presented no oral argument on this term apart from the arguments presented as to constituent terms addressed above.

(b) Analysis

The disputes regarding this disputed term are essentially the same as the disputes addressed separately, above, as to the terms “the packet is selectively altered to be invalid” and “if a determination has not been made . . . by the time the end portion of the packet is received.”

The Court therefore hereby construes “**wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received**” to have its **plain meaning** (apart from the constructions of constituent terms).

7. “as [a / the] packet is being received and transmitted between the first and second interface circuits” and “while the packet is being received and transmitted between the first and second interface circuits”

“as [a / the] packet is being received and transmitted between the first and second interface circuits”

“while the packet is being received and transmitted between the first and second interface circuits”⁵

’482 Patent, Claims 31, 33
’784 Patent, Claim 1, 3

Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
Plain and ordinary meaning.	“while receiving and transmitting the packet at the same time at the first interface circuit”

Dkt. No. 45-1 at 15–16; Dkt. No. 49 at 22; Dkt. No. 53 at 21; Dkt. No. 55-1 at 29.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “while simultaneously receiving and transmitting the packet between the first and second interface circuits.”

⁵ “Cisco originally proposed construing: ‘as [a / the] packet is being received and transmitted’ / ‘while the packet is being received and transmitted.’ However, Cisco has proposed this alternative term, which expands the claim language slightly, to address 802 Systems’ argument regarding grammar and reduce the disputed issues between the parties. 802 Systems has similarly changed their claim term for construction with respect to Terms 5 and 6.” Dkt. No. 53 at 21 n.3.

(a) The Parties' Positions

Plaintiff argues that “[w]hen read in the context of the claims, the meaning is clear and does not require a construction,” and “[t]he Court should reject Defendant’s construction because it does not account for the context in which the disputed phrase appears and is in fact inconsistent with the Claims.” Dkt. No. 49 at 22. Plaintiff also argues:

To the extent Defendant’s construction is intended to convey that the filtering takes place as the packet passes through the first interface, Defendant’s proposal contradicts common sense and [sic] as well as the Patents’ disclosure. Specifically, a packet has a definite beginning and a definite end. There may be times where the packet passes from the first interface to the second interface where the first bit of the packet has passed the first interface circuit but not yet reached the structure that performs filtering (e.g., the filtering circuit). Thus, it may not even [be] possible to perform filtering at the point in time when the first part of the packet crosses the first interface circuit.

Id. at 24.

Defendant responds that Plaintiff’s interpretation “rewrites the claim in an attempt to encompass situations where the packet is received by the first interface circuit, transmitted out of the first interface circuit, and buffered, or stopped, between the two interface circuits while the packet is subjected to filtering criteria . . .” Dkt. No. 53 at 21. Defendant argues that this interpretation by Plaintiff “directly contradicts the claim language, the specifications, and file histories of the Asserted Patents.” *Id.* at 22.

Plaintiff replies that “[t]he full context of the disputed claims conclusively rebuts Defendant’s construction,” and “[t]he claim language at issue clearly refers to filtering by a programmable logic device / filtering circuit coupled between both circuits, where the filtering occurs as the packet passes *between* the first and second interface circuits.” Dkt. No. 54 at 6–7 (citation omitted). Plaintiff also argues that the specification undercuts Defendant’s interpretation. *See id.* at 7–8.

At the July 27, 2021 hearing, Plaintiff acknowledged that the filtering operations for a packet occur while the packet is moving between the first interface and the second interface.

(b) Analysis

Claim 1 of the '784 Patent, for example, recites (emphasis added):

1. A data protection system for filtering packets between at least an internet network and an internal network, wherein data is transmitted and received in the form of a plurality of packets, comprising:

 a first interface circuit for coupling packets to and from the internet network;

 a second interface circuit for coupling packets to and from the internal network;

 a filtering circuit coupled between the first interface circuit and the second interface circuit;

 wherein, as *a packet is being received and transmitted between the first and second interface circuits*, the packet is simultaneously subjected to one or more filtering criteria by the filtering circuit, wherein an end portion of the packet is selectively altered by the filtering circuit based on the filtering criteria, wherein the packet is selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.

This claim thus recites that “filtering” is completed (or it is determined that “a determination has not been made”) before the packet is fully received, and the recital of “received and transmitted” indicates that receiving and transmitting occur at the same time.

Plaintiff emphasizes the claim language reciting “as a packet is being received and transmitted *between* the first and second interface circuits.” The word “between” indicates that the packet can move in either direction. That is, the packet could be received at the first interface and transmitted to the second interface, or the packet could be received at the second interface and transmitted to the first interface. Plaintiff’s reliance on disclosures regarding a programmable logic device between the first interface circuit and the second interface circuit is unavailing. The phrase “received and transmitted” refers to receiving and transmitting at the same time.

Plaintiff also argues that “[t]here may be times where the packet passes from the first interface to the second interface where the first bit of the packet has passed the first interface circuit but not yet reached the structure that performs filtering (e.g., the filtering circuit).” This argument is unavailing because the claims do not necessarily require that filtering must be occurring *at all times that* “a packet is being received and transmitted.” What is required, however, and what Plaintiff’s interpretation might *not* require, is that the recited filtering must occur during the receiving and transmitting. Claim construction is appropriate to resolve the dispute in this regard.

The specification is consistent with the Court’s interpretation, disclosing for example that “packet data reception, filtering, and transmission are conducted *simultaneously*.” ’482 Patent at 3:23–25 (emphasis added). The specification further discloses:

In accordance with the present invention, as the data of a packet comes in from one link (port), the packet’s electrical signal is reshaped and then transmitted down other links. During this process, however, a filtering decision is made between the time the first bit is received on the incoming port and the time the last bit is transmitted on the outgoing links. During this short interval, a substantial number of filtering rules or checks are performed, resulting in a determination as to whether the packet should or should not be invalidated by the time that the last bit is transmitted. To execute this task, the present invention performs multiple filtering decisions *simultaneously*: data is received; data is transmitted; and filtering rules are examined in parallel and in real time. For example, on a 100 Mbit/sec Ethernet network, 4 bits are transmitted every 40 nano seconds (at a clock speed of 25 MHz). The present invention makes a filtering decision by performing the rules evaluations simultaneously at the hardware level, preferably with a programmable logic device.

Id. at 2:41–59 (emphasis added); *see id.* at 1:8–12 (“data protection systems and methods for filtering packets, such as from the Internet, in real time and without packet buffering”), 4:53–59 (“The packets are transmitted to data protection system 1, which analyzes the packets in ‘real time’ and without buffering of the packets, while at the same time beginning the process of transmitting the packet to the internal network(s)[.]”), 6:43–63 (“What is important is that packet

type filtering is performed by filters 26 in the shortest time interval possible and in parallel with the packet data being received and transmitted to internal PHY 18, so that a pass/fail determination may be made prior to the time when the entire packet has been received by repeater core 16.”).

The specification likewise further discloses as follows regarding the need to “transmit data while receiving data”:

[T]he data protection system cannot make a decision about a packet before forwarding the nibbles on the non-receiving interfaces since this may result in an inoperable Ethernet network. If the system is enabled to filter a packet, it must still transmit data while receiving data to ensure the Ethernet network functions correctly and efficiently.

’482 Patent at 11:54–59. Thus, for example, transmission is occurring out of the first interface circuit toward the second interface circuit while transmission is also occurring out of the first interface circuit toward the filtering circuits. At the July 27, 2021 hearing, Plaintiff acknowledged that filtering of a packet occurs while the packet is moving between the first interface and the second interface.

The prosecution history is also consistent with this interpretation, the patentee having stated that “as a packet is received and transmitted, it in parallel is analyzed to determine whether it should be selectively altered so as to be invalidated,” and the patentee distinguished a cited reference that contemplated receiving one or a plurality of entire ATM cells/packets in order to make filtering decisions. Dkt. No. 53-6 at 58–59, June 28, 2004 Amendment.

Finally, at the July 29, 2021 hearing, the parties agreed that there may be some transmission of a packet that occurs after all receiving is completed for that packet. This does not undermine interpreting the disputed term such that the receiving and transmitting must occur at the same time, however, because the disputed term relates to what must occur “as a packet is

being received and transmitted between the first and second interface circuits” for this claim limitation to be satisfied. That is, the Court’s construction does not amount to a distinct claim limitation requiring that receiving must always be occurring when transmitting is occurring (and vice versa). Rather, the claim limitation here at issue requires that the recited filtering of a packet occurs while the packet is both being received and being transmitted.

With this understanding, the Court hereby construes “**as [a / the] packet is being received and transmitted between the first and second interface circuits**” and “**while the packet is being received and transmitted between the first and second interface circuits**” to have their **plain meaning**.

8. “in parallel with the step of receiving and transmitting the packet,” “in parallel with the receiving and transmitting of the packet,” and “in parallel with the packet being received and transmitted between the first and second interface circuits”

“in parallel with the step of receiving and transmitting the packet”

“in parallel with the receiving and transmitting of the packet”

“in parallel with the packet being received and transmitted between the first and second interface circuits”⁶

'482 Patent, Claims 1, 11, 40
'784 Patent, Claim 16

Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
Plain and ordinary meaning.	“while receiving and transmitting the packet at the same time at the external/internet PHY interface”

Dkt. No. 45-1 at 18; Dkt. No. 49 at 24; Dkt. No. 53 at 25; Dkt. No. 55-1 at 33.

⁶ “Cisco originally proposed construing: ‘in parallel with the packet being received and transmitted.’ However, Cisco has proposed this alternative term, which expands the claim language slightly, to address 802 Systems’ argument regarding grammar and reduce the disputed issues between the parties. 802 Systems has similarly changed their claim term for construction with respect to Terms 5 and 6.” (Dkt. No. 53 at 25 n.4.)

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “Plain meaning (Expressly reject Defendant’s proposal of ‘at the external/internet PHY interface’).”

(a) The Parties’ Positions

Plaintiff argues that “[w]hen read in the context of the claims, the meaning is clear and does not require a construction,” and “[t]he Court should reject Defendant’s construction because it is inconsistent with intrinsic record.” Dkt. No. 49 at 24. Plaintiff argues:

Defendant proposes construing that [sic] the disputed language as “while receiving and transmitting the packet at the same time at the external/internet PHY interface.” But this construction is contrary to the plain language of the claim, which makes clear that the “receiving” relates to “receiving a packet from the external computing system” (e.g., at the first interface that connects to an external network, such as the internet) and the “transmitting” relates to “transmitting the packet to the internal computing system.” In other words, the “in parallel” relates to the time period the packets are passing through the system. The phrase “in parallel” does not relate to “at the same time at the external/internet PHY interface.”

Id. at 25.

Defendant responds that these disputed terms present substantially the same issues as the “. . . packet is being received and transmitted . . .” terms, which are addressed above. Dkt. No. 53 at 25. Defendant also argues that “[t]he additional ‘in parallel’ language further supports Cisco’s construction that the receiving and transmitting must occur ‘at the same time’ at the first interface circuit / external PHY interface / internet PHY interface.” *Id.*

Plaintiff’s reply brief does not address these terms. *See* Dkt. No. 54.

At the July 27, 2021 hearing, Defendant reiterated that the packet cannot be “buffered” or otherwise stopped and held. Plaintiff responded that “parallel” is simply not serial, and the recited actions need not start and end at the same time.

(b) Analysis

For the same reasons as for the terms “as [a / the] packet is being received and transmitted between the first and second interface circuits” and “while the packet is being received and transmitted between the first and second interface circuits,” which are discussed above, the present disputed terms require that the recited filtering of a packet occurs while the packet is both being received and being transmitted.

With that understanding, the Court hereby construes “**in parallel with the step of receiving and transmitting the packet**,” “**in parallel with the receiving and transmitting of the packet**,” and “**in parallel with the packet being received and transmitted between the first and second interface circuits**” to have their **plain meaning**.

9. “stateful”

“stateful”	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“stateful,” in the context of a “stateful filter portion,” “stateful filtering criterion,” “stateful filtering criteria,” or “stateful filtering,” relates to filtering based on characteristics of the packet being examined and communication state information relating to past network activity	Plain meaning

Dkt. No. 45-1 at 20–21; Dkt. No. 49 at 26; Dkt. No. 53 at 25; Dkt. No. 55-1 at 36.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction: “using information relating to past network activity.”

(a) The Parties' Positions

Plaintiff argues that “[s]tateful filtering’ is unequivocally linked to the concept of filtering packets using previous network activity.” Dkt. No. 49 at 26 (citing ’784 Patent at 2:28–34). Plaintiff also cites disclosures regarding Figures 2, 6, and 8 as being consistent with Plaintiff’s interpretation. *See* Dkt. No. 49 at 26–28.

Defendant responds that “[r]ather than construe ‘stateful’ (the agreed upon claim term), 802 Systems attempts to construe various larger phrases that relate to *filtering*, and as a result they propose a construction that does not define stateful, but rather, confusingly combines both stateful and non-stateful activity, while still excluding other stateful activity in the specification.” Dkt. No. 53 at 26. “Cisco proposes plain meaning, because the meaning of stateful is well-known to a person of skill in the art, as disclosed in the specification, and defined in 802 Systems’ own extrinsic evidence.” *Id.* “Lastly,” Defendant argues, “802 Systems’ proposed construction for the ‘stateful filtering’ terms uses the words ‘state’ and ‘filtering’—the very terms it seeks to construe—and is therefore completely unhelpful for the fact finder.” *Id.* at 27.

Plaintiff replies:

[Plaintiff’s proposal] is consistent with the embodiments cited in the Opening Brief, whereby stateful filtering compares characteristics of a current packet to state information relating to past network activity. *See* Opening Brief, 26–27. This is in contrast to non-stateful filtering, which utilizes only characteristics of a packet. Thus, the proper construction must note that stateful filtering utilizes both characteristics of a packet *and* communication state information.

Dkt. No. 54 at 9.

At the July 27, 2021 hearing, Defendant cited disclosure in the specification regarding a physical switch “state.” *See* ’482 Patent at 12:8–18. Plaintiff responded that “stateful” is a term of art in the context of computers and communication protocols, and Plaintiff also noted that

dependent Claim 42 expressly recites filtering criteria based on the state of one or more physical switches.

(b) Analysis

Claims 3 and 4 of the '784 Patent, for example, recite (emphasis added):

3. The system of claim 1, wherein the filtering circuit includes at least first logic for determining characteristics of the packet being received and transmitted between the first and second interface circuits and at least a filter portion that subjects the packet to the plurality of filtering criteria while the packet is being received and transmitted between the first and second interface circuits.
4. The system of claim 3, wherein the filter portion includes at least a *stateful* filter portion and a *non-stateful* filter portion.

As another example, Claims 34 and 35 of the '482 Patent recite:

34. The system of claim 33, wherein the filter portion includes at least a *stateful* filter portion and a *non-stateful* filter portion.
35. The system of claim 34, wherein the *stateful* filter portion subjects the packet to one or more *stateful* filtering criterion and the *non-stateful* filter portion subjects the packet to one or more *non-stateful* filtering criterion.

Defendant submits evidence that “stateful” involves previous states or history. *See* Dkt. No. 53-15, *Newton’s Telecom Dictionary* (23d ed. 2007) (“stateful”: “Protocols that maintain information about a user’s session. FTP is a stateful protocol. Stateless is the opposite.”); *id.*, *New Penguin Dictionary of Computing* 469 (2001), (“stateful”: “The opposite of stateless. Said of a computer program or a communications protocol that retains some memory of its previous states or history”).

The '784 Patent, for example, refers to a stateful packet filter as using packet data and previous network activity:

A packet filter is a device that examines network packet headers and related information, and determines whether the packet is allowed into or out of a network. A stateful packet filter, however, extends this concept to include packet

data and previous network activity in order to make more intelligent decisions about whether a packet should be allowed into or out of the network.

'784 Patent at 2:28–34. Plaintiff submits that examples of past network activity disclosed in the specification include source and destination IP addresses for established connections as well as port utilization. *See id.* at 7:4–10, 13:48–56.

Plaintiff also cites disclosure that “state rules filters 42” make packet filtering decisions based on the characteristics of the packet being examined as well as communication state information relating to past network activity:

State rules filters 42 receive *packet characteristics* data from logic 22 and, *based on this data as well as cached/stored connection and communication state information*, executes a plurality of rules under the control of rules controller 28, preferably using a plurality of rules engines 36-1 to 36-N, so that a desired set of filtering decisions are promptly made and a pass/fail determination occurs before the entire packet has been received by repeater core 16. State rules filters 42 preserve a cache of information 30 about *past network activity* (such as IP addresses for established connections, port utilization, and the like), which is used to maintain network connection state information about which hosts have been exchanging packets and what types of packets they have exchanged, etc. Rules controller 28 preferably accesses rules map table 32 based on packet characteristics information, which returns rules dispatch information to rules controller 28. Thus, *based on the connection state information stored in connection cache 30 and the characteristics of the packet being examined*, rules controller 28 initiates filtering rules via a plurality of rules engines 36-1 to 36-N that simultaneously apply the desired set of filtering rules in parallel.

Id. at 6:64–7:17 (emphasis added).

Defendant emphasizes that the claims demonstrate a distinction between “stateful” filter portions and “non-stateful” filter portions. For example, Claim 34 of the '482 patent recites a filter portion which includes “a stateful filter portion” and a “non-stateful filter portion.” Claim 35 further recites that “the stateful filter portion subjects the packet to one or more stateful filtering criterion,” and that “the non-stateful filter portion subjects the packet to one or more non-stateful filtering criterion.” Defendant argues that Plaintiff’s interpretation of “stateful”

would render the “non-stateful” filter portion superfluous, and a construction that renders a limitation superfluous is generally disfavored. *See, e.g., Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1399 (Fed. Cir. 2014) (favoring construction that does not render another limitation superfluous).

On balance, referring to “past network activity” is most consistent with the above-discussed evidence, and other claim language addresses the application of this to the recited filtering.

Finally, to whatever extent Defendant is interpreting “stateful” as potentially referring to the “‘state’ of a physical switch” (Dkt. No. 53 at 26 (citing ’482 Patent at 8:52–55)), the *present* position of a physical switch would not be a “previous state[] or history.” Dkt. No. 53-16, *New Penguin Dictionary of Computing* 469 (2001). Although the specification refers to “state registers” (*see, e.g.*, ’784 Patent at 16:4–17:11), the Court hereby expressly rejects Defendant’s interpretation that “stateful” refers to using the current position of a physical switch,.

With that understanding, the Court hereby construes “**stateful**” to mean “**using information relating to past network activity**.”

10. “valid” and “invalid”

“valid”	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
Plain and ordinary meaning.	“a packet that has passed all of the checks/filtering criteria and whose end portion will not be selectively altered”

“invalid”	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
Plain and ordinary meaning.	“a packet that has failed one or more checks/filtering criteria and whose end portion will be selectively altered”

Dkt. No. 45-1 at 23, 25–26; Dkt. No. 49 at 28; Dkt. No. 53 at 28, 30; Dkt. No. 55-1 at 39, 45.

Shortly before the start of the July 27, 2021 hearing, the Court provided the parties with the following preliminary construction for both of these terms: “Plain meaning.”

(a) The Parties’ Positions

Plaintiff argues that “[t]he Patents use the terms ‘valid’ and ‘invalid’ consistent with their plain and ordinary meaning,” and “the Claims themselves provide more than ample context for the terms’ usage. Dkt. No. 49 at 28. Plaintiff also argues:

While certain aspects of the Defendant’s proposed constructions are consistent with the terms’ usage in the asserted claims, other aspects are not. In particular, Defendant’s construction of “invalid” improperly links a packet’s invalidity to “fail[ing] one or more checks/filtering criteria.” This aspect of Defendant’s construction ignores that a packet may be “selectively altered to be invalid if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received.” *See* [’784 Patent], Claim 1. In other words, an “invalid” packet is not necessarily one that “failed one or more checks/ filtering criteria” (Defendant’s construction).

Id. at 29.

Defendant responds that construction is necessary because it is unclear “what a POSITA [(person of ordinary skill in the art)] would have understood the term ‘valid’ to mean in the context of the claim at the time of the invention.” Dkt. No. 53 at 28. Defendant argues that “802 Systems provides no explanation of why Defendant’s construction of ‘invalid’ is incorrect, and

identifies nothing about Defendant's construction that is inconsistent with the meaning of that term in the claims or specification." *Id.* (citing Dkt. No. 49 at 29). Defendant also argues that its proposal properly accounts for instances where no determination had been made by the time the end of the packet is received because "[t]his timing limitation regarding the end portion of the packet is a filtering criteria, and the failure to make an assessment by the time the end of the packet is received is a failed condition." Dkt. No. 53 at 30 (citation omitted).

Plaintiff replies that "[t]he Claims themselves provide more than ample context and there is no reason for the Court to construe these terms," and "Defendant's constructions for these terms create confusion." Dkt. No. 54 at 10. Plaintiff submits that "Defendant introduces a future tense into their proposed constructions (i.e., 'will be selectively altered') that differs from the present tense of 'is selectively altered' and the past tense of 'a determination has not been made as to whether the packet is valid or invalid' in the claim language.'" *Id.* Further, Plaintiff argues: "[I]t is not clear what Defendant means by '*all* of the . . . filtering criteria.' This aspect of Defendant's construction is narrower than the claim language 'based on the filtering criteria.'" *Id.*

At the July 27, 2021 hearing, the parties presented no oral arguments regarding these terms.

(b) Analysis

Claim 1 of the '482 Patent, for example, recites (emphasis added):

1. A method for communicating data between an external computing system and an internal computing system over a packet-based network, wherein data is transmitted and received in the form of a plurality of packets, the method comprising the steps of:

receiving a packet from the external computing system over the network, the packet having at least a first portion and an end portion, and transmitting the packet to the internal computing system;

in parallel with the step of receiving and transmitting the packet, determining characteristics of the packet from the first portion;

in parallel with the step of receiving and transmitting the packet, performing a plurality of checks on the packet, wherein at least certain of the plurality of checks are performing in parallel with other of the plurality of checks;

in parallel with the step of receiving and transmitting the packet, determining if the packet should be a *valid* packet or an *invalid* packet based on the plurality of checks; and

after receiving the end portion of the packet, selectively altering the end portion of the packet based on whether the packet has been determined to be a *valid* packet or an *invalid* packet, wherein the packet is selectively altered to be *invalid* if it was determined that the packet should be an *invalid* packet, wherein the packet is selectively altered to be *invalid* if a determination has not been made as to whether the packet is *valid* or *invalid* by the time the end portion of the packet is received.

As another example, Claim 1 of the '784 Patent recites (emphasis added):

1. A data protection system for filtering packets between at least an internet network and an internal network, wherein data is transmitted and received in the form of a plurality of packets, comprising:

a first interface circuit for coupling packets to and from the internet network;

a second interface circuit for coupling packets to and from the internal network;

a filtering circuit coupled between the first interface circuit and the second interface circuit;

wherein, as a packet is being received and transmitted between the first and second interface circuits, the packet is simultaneously subjected to one or more filtering criteria by the filtering circuit, wherein an end portion of the packet is selectively altered by the filtering circuit based on the filtering criteria, wherein the packet is selectively altered to be *invalid* if a determination has not been made as to whether the packet is *valid* or *invalid* by the time the end portion of the packet is received.

The claims thus use the word “invalid” in two distinct but related contexts. In the recital of “wherein the packet is selectively altered to be invalid,” “invalid” appears to refer to a *result* of the “selectively alter[ing].” In the recital of “if a determination has not been made as to whether the packet is valid or invalid by the time the end portion of the packet is received,” “invalid” appears to refer to a *determination* that the packet *will be* selectively altered.

Reading these claims as a whole, the recital of “whether the packet is valid or invalid” is readily understandable as referring to whether, based on the filtering criteria, the packet should be altered so as to be invalid. In other words, the context provided by surrounding claim language demonstrates that the terms “valid” and “invalid” are being used to refer to the result of the “selectively altering.”

The specification is consistent with this understanding. For example, the specification discloses:

To determine *whether the packet should be allowed to pass as a valid packet*, the filters must implement rules in parallel preferably based on programmable logic and register one of two values: pass or fail. After the values are registered, the outcome is collected in result aggregator 24, which logically combines the results to *determine if the packet should be allowed to pass as a valid packet or should be denied as an invalid one*. If the packet is passed, then repeater core 16 continues to send correct bits. If the packet is failed, then it is junked.

’482 Patent at 9:22–31 (emphasis added); *see id.* at 4:59–5:4 (“it is allowed to pass to hub 6 as a valid packet”), 6:26–42. Defendant also notes similar statements during prosecution. *See* Dkt. No. 53-6 at 58, June 28, 2004 Amendment, (“as a packet is received and transmitted, it in parallel is analyzed to determine whether it should be selectively altered so as to be invalidated”).

On balance, the meaning of “valid” and “invalid” is readily apparent from the context provided by surrounding claim language. Attempting to construe these terms would tend to confuse rather than clarify the scope of the claims. For example, Defendant’s proposal to construe “invalid” to mean “a packet that has failed one or more checks/ filtering criteria and whose end portion *will be* selectively altered” would introduce confusion where the above-reproduced claims recite “the packet *is* selectively altered to be invalid.” Whereas Defendant’s proposal might thus give rise to an inconsistency between “will be” and “is,” the finder of fact

can derive a better contextual understanding for each usage of “valid” or “invalid” based on the claim language itself. The Court therefore need not address whether the so-called timing limitation (“if a determination has not been made . . . by the time the end portion of the packet is received) is one of the recited “filtering criteria” or instead is distinct from the filtering criteria (this is a potential dispute that arises only out of Defendant’s proposed construction).

Finally, Defendant argues that “802 Systems’ construction leaves open the possibility that a packet can be ‘invalid’ for a reason wholly unrelated to the filtering criteria, which is inconsistent with both the claims and the specification.” (Dkt. No. 53 at 30.) Because these are “comprising” claims, the claims do not preclude some other mechanism for packets to be invalid. *See, e.g., Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997) (“‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.”).

The Court therefore hereby expressly rejects Defendant’s proposed constructions, and no further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”); *see also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected Defendants’ construction.”); *ActiveVideo Networks, Inc. v. Verizon Commcn’s, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v.*

Samsung Elecs. Co., Ltd., 802 F.3d 1283, 1291 (Fed. Cir. 2015); *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 977–79 (Fed. Cir. 2021).

The Court accordingly hereby construes “**valid**” and “**invalid**” to have their **plain meaning**.

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patent-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 4th day of August, 2021.



ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

APPENDIX A

<u>Term</u>	<u>Parties' Agreement</u>
“characteristics of the packet” / “packet characteristics” ’482 Patent, Claims 1, 33, 61 ’784 Patent, Claims 3, 7	Plain and ordinary meaning
“junked” ’267 Patent, Claim 1	“to be junked” means “to have bits changed or data truncated, depending on the type of link, in a manner such that the packet is corrupted or otherwise will be detected by the receiving computers as invalid or unacceptable, etc.”

Dkt. No. 45 at 1.